

Type 2ST

RoHS

Slow Blow Square Ceramic Surface Mount Fuse



AEC-Q Compliant



Features

- Slow Blow
- Small size, 2410 SMD
- Wide range of current rating from 62mA to 7A
- Wide operating temperature range
- Tape & Reel for auto-insert SMD process
- Compatible with 260°C, IR Pb-free solder process
- Fully compliance with EU Directive 2011/65/EU and amending directive 2015/863 (MSL = 1)
- Halogen Free
- Lead Free
- Meets Vicfuse automotive qualification*
- * - Largely based on internal AEC-Q test plan

Electrical Characteristic

Cartridge Catalog Number	Ampere Rating [In]	Voltage Rating (V)	Nominal Resistance Cold Ohms	Nominal Melting I ² t A ² Sec
2ST.375	375mA	125V	0.7210	0.1510
2ST.500	500mA		0.4908	0.2839
2ST.625	625mA		0.4030	0.4756
2ST.750	750mA		0.2520	0.6923
2ST001	1A		0.1621	1.3073
2ST1.50	1.5A		0.0832	3.1025
2ST002	2A		0.0622	5.7047
2ST2.50	2.5A		0.0442	9.0032
2ST003	3A		0.0331	16.054
2ST3.50	3.5A		0.0275	20.124
2ST3.75	3.75A		0.0252	24.357
2ST004	4A		0.0240	26.081
2ST005	5A		0.0176	43.032
2ST006	6A		0.0134	63.235
2ST6.30	6.3A		0.0127	70.021
2ST007	7A		0.0112	90.027

Approval

Recognized Component for Canada and U.S. 0.062~7A

TUV 0.062~7A

Electrical Characteristic

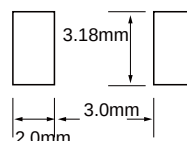
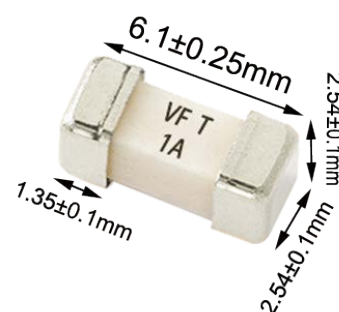
Rated current	1 In	2 In		3 In		8 In	
	MIN	MIN	MAX	MIN	MAX	MIN	MAX
62mA~7A	4hr	1 sec	60 sec	0.2 sec	3 sec	0.02 sec	0.1 sec

Environmental Temperature at 25°C

Interrupting Rating

100 amperes at 125VAC/DC

Mechanical Dimension



Recommended pad layout

Physical Specification

Material

Body: Ceramic

Terminations : Palladium plated Brass Caps

Packaging

1,000 Fuses in 7 inches dia. reel, or 5,000 fuses in 13 inches dia. reel,
12mm wide tape, per EIA Standard 481

Environmental Specification

Operating Temperature

-55°C to +125°C

Vibration

MIL-STD-202G, Method 201 (10-55 Hz,
0.06 inch, total excursion)

Salt Spray

MIL-STD-202G, Method 101E, Test Condition B
(48Hrs)

Insulation Resistance

MIL-STD-202G, Method 302, Test Condition A
(10,000 ohms minimum)

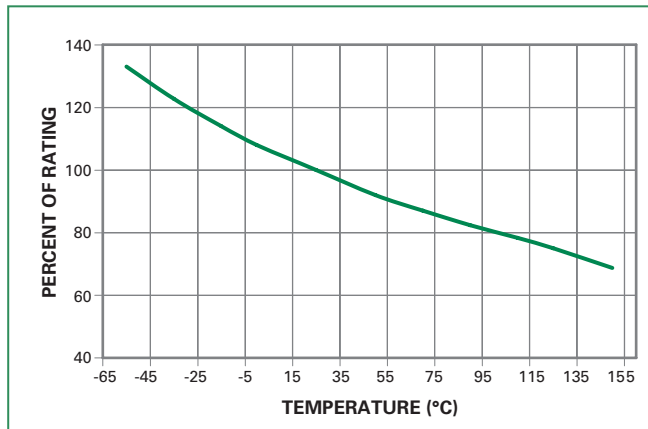
Resistance to Solder Heat

MIL-STD-202G, Method 210F, Test Condition D
(10sec, at 260°C)

Thermal Shock

MIL-STD-202G, Method 107, Test Condition B
(-65°C to +125°C)

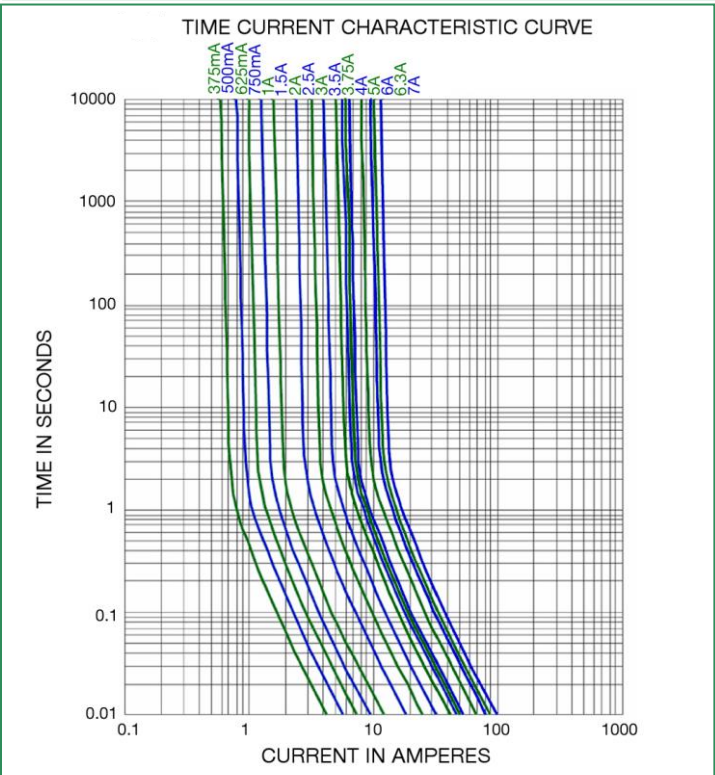
Temperature Derating Curve



Note:

- Derating depicted in this curve is in addition to the standard derating of 25% for continuous operation.

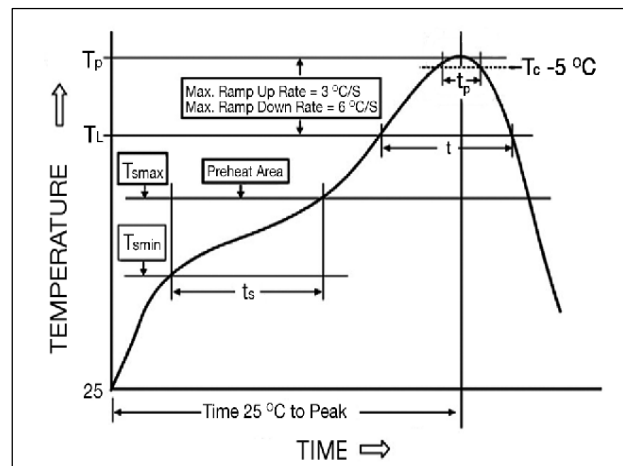
Average Time Current Curves



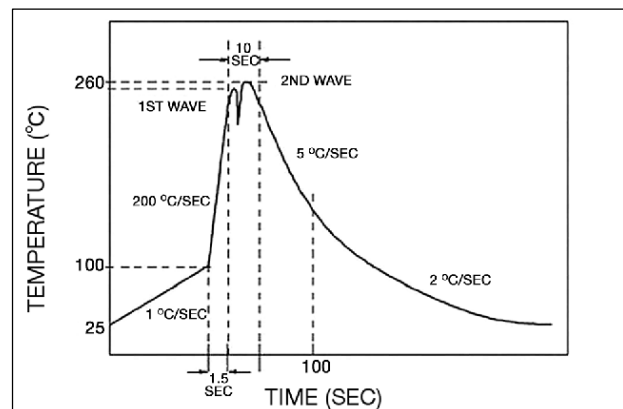
Soldering Parameters

Recommended pad layout

IR Reflow Profile (IPC/JEDEC J-STD-020D)	
Preheat & Soak	
Temperature min (T _{min})	150°C
Temperature max (T _{max})	200°C
Time (T _{min} to T _{max}) (t _s)	60-120 seconds
Average ramp-up rate (T _{max} to T _p)	3°C/second max.
Liquidous temperature (T _L)	217°C
Time at liquidous (t _L)	60-150 seconds
Peak temperature (T _p)	260°C max
Time (t _p) within 5°C of the specified classification temperature (T _c)	30 seconds
Average ramp-down rate (T _p to T _{max})	6°C/second max.
Time 25°C to peak temperature	8 minutes max.

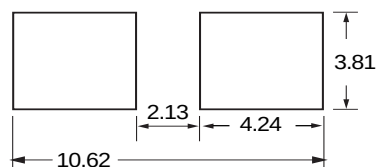


Lead-free Wave Soldering Profile	
Wave Soldering Parameter	
Average ramp-up rate	200°C / second
Heating rate during preheat	typical 1 - 2°C / second Max 4°C / second
Final preheat temperature	within 125°C of soldering temperature
Peak temperature T _p	260°C
Time within +0°C / -5°C of actual peak temperature	10 seconds
Ramp-down rate	5°C / second max.

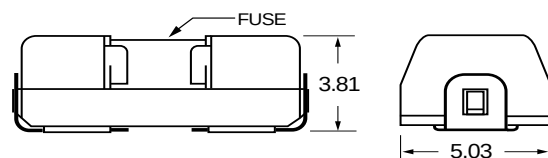
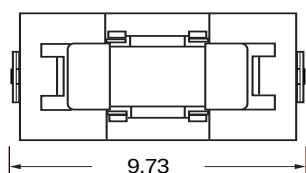


With Fuse Block: 100mA~7A

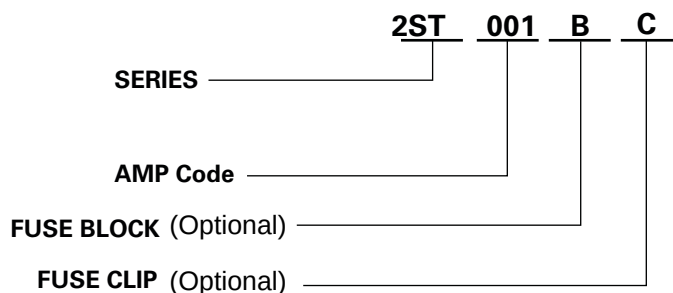
Mechanical Dimension(mm)



Recommended Pad Layout

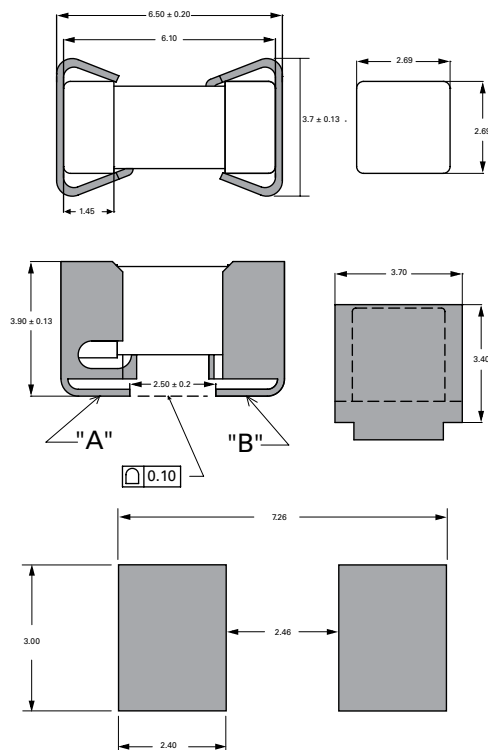


Part Numbering System



With Fuse Clip: 100mA~5A

Mechanical Dimension(mm)



PCB Recommendation for Thermal Management

1. Minimum Copper Layer Thickness = 100um
2. Minimum Copper Trace Width = 10mm

Note:

Alternate methods of thermal management may be used. In such cases, under normal operations, the maximum temperature of the fuse body should not exceed 80°C in a 25°C ambient environment.